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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,344	09/22/2005	Nicolas Villain	FR 030033	1254
24737 7590 10/23/2008 PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510				
EXAMINER				
CWERN, JONATHAN				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/550,344

**Applicant(s)**

VILLAIN ET AL.

**Examiner**

Jonathan G. Cwern

**Art Unit**

3737

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Specification***

The abstract of the disclosure is objected to because there is means language. Correction is required. See MPEP § 608.01(b).

### ***Claim Objections***

Claims 1-10 are objected to because of the following informalities:

In claims 1-4, 7, and 9, delete the space before the period at the end of the claim.

In claim 1, lines 3 and 9, delete the space before the semicolon at the end of the lines.

In claim 8, line 6, delete the space before the semicolon at the end of the line.

In claim 9, in the preamble, add the word "system" after "medical imaging".

In claim 10, "the sub-regions" map lacks antecedent basis. Also, the term "regions map" is not used throughout the other claims and it may have been intended for this term to actually be "sub-regions map", which would fix the antecedent basis problem.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 9 is confusing, it is unclear how forming a volume of digital data differs from acquiring a volume of digital data.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 10 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claim is directed to non-statutory subject matter because the claim does not contain a useful, concrete, and tangible result. The claim also does not provide a sufficient tie to another statutory class for performing the method or transform underlying subject matter to a different state or thing. It is an improper process claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Demonceau et al. (US 6389310).

Demonceau et al. show, acquisition means to acquire a volume of 3D data comprising an object of interest (column 18, lines 40-55); segmenting a region of interest comprising the object of interest within the volume (column 28, lines 25-30); displaying a 2D representation of the volume and segmented region of interest (column 31, lines 40-50); calculation a sub-region map within the segmented region (watersheds used to removed segments at the border of the image and segments isolated in the background, this new image caused by watershed segmentation can be called the sub-region map, column 28, lines 30-50); excluding sub-regions from the region of interest using the sub-region map (column 28, lines 30-50). Demonceau et al. also show, calculating a map of distances (distances are used to identify and segment the Aorta Descendens, the combination of these calculated distances can be called a "map of distances", column 21, lines 1-25; a map of distances is also used to correct for movement of the Valvular Plane, again the combination of the calculated distances can be called a "map of distances", column 25, lines 10-25); merging sub-regions (column 22, lines 20-45); user control to select sub-regions for exclusion (column 32, lines 5-35); updating the 2D representation to take into account effects of the excluded regions (the 2D displays can be calculated earlier in case the user makes no changes, this implies that if the user makes changes, the 2D displays will have to be updated, column 31, lines 40-50; further discussion of user control, two-dimensional representation, and displays can be found in column 31, line 50-column 39, line 15, wherein the user makes

changes if desired to re-segment the image, the 2D representations are made and then displayed); labeling the sub-regions (column 20, line 27); forming a volume of digital data including the object of interest (forming is taken to mean reconstructing the data, column 18, lines 45-55); and a computer program product (column 3, lines 25-40).

It should be noted that specific examples are given above for each claim, however they can be interpreted in a variety of ways. Demonceau et al. teach a method involving segmenting an image to label each part of the heart. The entire heart can be considered the region of interest, and each part of the heart can be considered a sub-region or sub-region map. And in finding and segmenting out each part of the heart, Demonceau et al. are excluding certain sub-regions from other sub-regions. In other words, the very act of segmenting involves excluding one region from another region! There are various segmentations performed in each step to isolate individual regions of the heart. In addition, there is a broader segmentation performed at the end in which the user can choose to segment the images again based on the user's preference. All of these different segmentations should be considered, as any can be considered the overall region of interest, or a more specific sub-region map.

### ***Response to Arguments***

Applicant's arguments filed 8/4/08 have been fully considered but they are not persuasive.

In regards to applicant's arguments regarding the 112 rejection, while most issues were addressed by the amendment, the amendment is not sufficient to overcome the rejection in regards to claim 9 as discussed above.

In regards to applicant's arguments regarding the 101 rejection, examiner respectfully disagrees. The claim is directed to non-statutory subject matter because the claim does not contain a useful, concrete, and tangible result. Applicant's response appears to indicate that applicant believes that the claim recites a new and/or improved process and thus recites patentable subject matter. To further clarify, the claim is an improper process claim, as it does not provide a sufficient tie to another statutory class such as an apparatus for performing the method or transform the underlying subject matter to a different state or thing.

In regards to applicant's arguments regarding claim 1, examiner respectfully disagrees. The examiner provided numerous examples in the previous action describing all of the different things which could be considered "sub-region maps". For the specific example of column 28, lines 24-50, the 4D segments are further labeled as left or right ventricular. That is, they are further defined into smaller regions, sub-regions. The term sub-regions map is broad and can be interpreted as many of the different steps of the segmentation process.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., performing the watershed algorithm on the map of distances) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification,

limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim 3 states that the means for calculating watersheds forms the sub-regions map based on the map of distances. This is not the same as performing a watershed algorithm on the map of distances. In addition, column 20, line 45-column 21, line 26 also describe watershed algorithms in addition to the distance maps. As yet another example of how the term sub-regions map can be broadly interpreted, the image is segmented, so that the segments are surrounded by valleys separating them from nearby segments. These segments within the segmented region can be considered the sub-regions map. Further, the distances are then used to determine which segments belong to the Aorta descendens, and the Aorta descendens is then defined by the union of those segments. This final step in the labeling of the Aorta descendens can also be considered the sub-regions map, the sub-regions map being formed based on the map of distances.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the



shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan G. Cwern whose telephone number is (571)270-1560. The examiner can normally be reached on Monday through Friday 9:30AM - 6:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jonathan G Cwern/  
Examiner, Art Unit 3737

/Ruth S. Smith/  
Primary Examiner, Art Unit 3737

